



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

648.4709

Job Sheet 172732



Part No: 648.4709

Job Qty: 1 ea

Part Name: SWA10A Overhaul



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 2/21/18

Job Tracking No:

Due Date: 4/27/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG OM_OOPM-SWA10A Rev 3 (648.4709) IPP Rev A 18.01.25 New issue DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		4/27/18	0.00	0.00	Start Up Small Fab-4		<i>SB</i>
110	Small Fab	1 pcs		4/27/18	0.00	0.00	Small Fab-4		<i>SB</i>
120	QC	1 pcs		4/27/18	0.00	0.00	QC5		<i>SB</i>
121	DC	1 pcs		4/27/18	0.00	0.00	DC		
130	Packaging	1 pcs		4/27/18	0.00	0.00	Packaging3-1 <i>GA</i>		<i>SmB</i>
140	QC21-FG	1 Ea		4/27/18	0.00	0.00	QC21		<i>DAS</i> MAR 15 2018

Part Op 110 - Pick bag and tag.

Descriptions: 121 - Supply owner's & overhaul procedures manual

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
188-FPSS-1032-1/2	Set Screw	1 Ea (1 ea)	90-Start up Operation	<i>503 7670</i>
188-FPSS-1032-3/8	Set Screw	1 Ea (1 ea)	90-Start up Operation	<i>503 7669</i>
188-FPSS-1032-5/8	Set Screw	1 Ea (1 ea)	90-Start up Operation	<i>503 70813</i>
188-FSCS-1032-5/8 ?	Wire Clamp Screw	4 Ea (4 ea)	90-Start up Operation	<i>30 24772 S 040654</i>
600.1319	Up Decal	1 Ea (1 ea)	90-Start up Operation	<i>503 6704</i>
EL314-SJTOW	3 Wire	6 ft (6 ea)	90-Start up Operation	<i>50 29542</i>
SWA10A-1100	Upper DU Bearing	1 Ea (1 ea)	90-Start up Operation	<i>50 37480</i>
SWA10A-1200	Lower DU Bearing	1 Ea (1 ea)	90-Start up Operation	<i>5036190</i>
SWA10A-1300	Roller Thrust Bearing	1 Ea (1 ea)	90-Start up Operation	<i>5036727</i>
SWA10A-1400	Circlip	1 Ea (1 ea)	90-Start up Operation	<i>50361911</i>
SWA10A-400	Thrust Washer	1 Ea (1 ea)	90-Start up Operation	<i>5029392</i>
SWA6A-1900	Female Spade Terminal - 1/4"	12 Ea (12 ea)	90-Start up Operation	<i>5027243</i>
SWA6A-2000	1/8" Female Spade Connector	4 Ea (4 ea)	90-Start up Operation	<i>5029410</i>

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	188-FPSS-1032-1/2	1	100	0
	188-FPSS-1032-3/8	1	100	0
	188-FPSS-1032-5/8	1	199	0
	188-FSCS-1032-5/8	4	184	0
	600.1319	1	250	0
	EL314-SJTOW	6	247	0
	SWA10A-1100	1	6	0

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only

Work Order: _____		Part No. _____		NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval					
Description Work Order Deviation						Disposition							
												Completed By	
												Lead hand / Supervisor Approval Verification	
												QC / QA Coordinator Approval	
Root Cause Environment ☐ No Re-verification ☐ Design ☐ Operator ☐ Doc/Data ☐ Offset/Setup ☐ Equip/Tooling ☐ Supplier ☐ Handling/Pre ☐ Training ☐ Material ☐ Use for Testing ☐ Internal Transport ☐ Poor Information ☐ Tribal Knowledge ☐ Rushing ☐ LOA ☐ Product Improvement ☐ Substation ☐ Process Improvement ☐ Past Expiry Date ☐ Manufacturing Process ☐ Misidentified ☐ Past Due ☐						FAULT CATEGORY ☐ Pressure/Forced ☐ Temperature/Cure ☐ Power Loss/Surge ☐ Positioned Wrong ☐ Bending ☐ Set-up ☐ Folio/Program ☐ Outside Dimensions ☐ Centre Not Concentric ☐ BOM/Route ☐ Grain ☐ Over/Under tolerance ☐ Cracks ☐ Broken/Damage/Defect ☐ Weld ☐ Part Incorrect ☐ Crimp/Kink/Ripple/Wave ☐ Inspection Incomplete/Unqualified ☐ Wrong Stock Pulled ☐ Part Lost/Missing ☐ Cuffs ☐ Contamination ☐ Out of Sequence ☐ Part Moved ☐ Crushing ☐ Countersink ☐ Off-set ☐ Drawing ☐ Heat Treat ☐ Cut Too Short ☐ Mislabeled ☐ Finish ☐ Wave/Twist in Tube ☐ Instructions Incomplete/Unclear ☐ Fit/Function ☐ Misread ☐ Marks/Chatter ☐ Drill Holes ☐ Misaligned/off center ☐ Turning Sequence							
OTHER :													

SWA10A-1200	1	10	0
SWA10A-1300	1	10	0
SWA10A-1400	1	10	0
SWA10A-400	1	0	0
SWA6A-1900	12	88	0
SWA6A-2000	4	100	0

Part Specifications

Specifications could not be found.

Plex 2/21/18 2:19 PM Dart.lajeunesse.marie



Container No: S047110



Part: 648.4709

Job No: 172732

Serial No/Batch: S047110

Revision: 3

Inspector:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 03/02/18

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

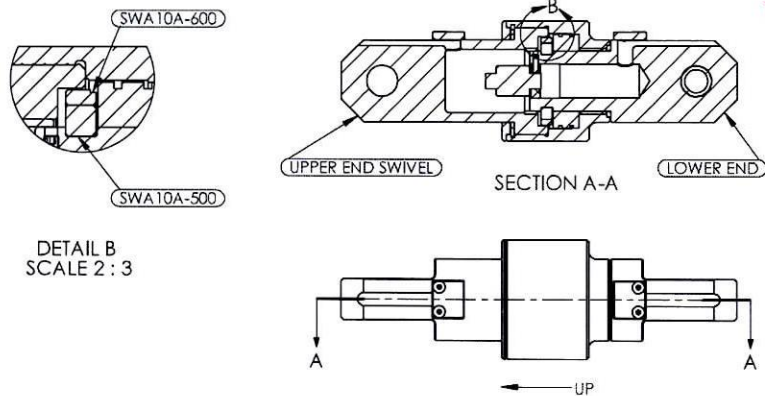
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

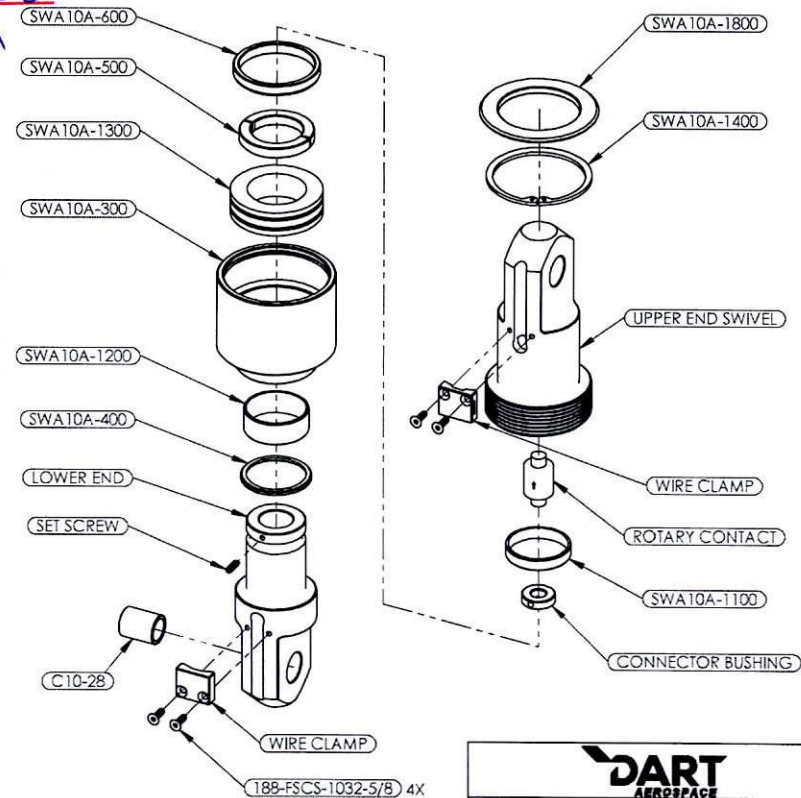
SHOP COPY

RETURN TO
ENGINEERING
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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 172732 MLW
180221

REVISIONS					DATE	INITIAL	APPROVED
REV	ECR	DESCRIPTION					
1		REPLACED ID DECAL 600.1318 WITH LASER ETCH			11/16/2012	JAG	
2	15-0146	UPDATED TO NEW DRAFTING STANDARDS. ADDED ENGRAVE NOTES AND DETAILS. SWA10A-1900 CHD QTY 5; ASSY-4 WAS 8 & 4, ASSY-5 WAS 10 & 8, ASSY-6 WAS 16 & 12. SWA10A-2000 ADDED P/N: ASSY-4 QTY 4; ASSY-5 QTY 4; ASSY-6 QTY 4. 188-FFS-1032-3/8 ADDED P/N: ASSY-8 QTY 1. 188-FFS-1032-1/2 ADDED P/N: ASSY-8 QTY 1. 188-FFS-1032-5/8 CHD QTY 5; ASSY-8 WAS 1 & 0. EL314-SITOW, EL414-ARTIC, EL614-ARTIC, EL814-ARTIC CHD QTY 5 WAS 3 & 1. ADDED 6/11/10 B/O INFO. ADDED REBUILD ONLY NOTE			6/16/2015	DPD	JAG
3	17-0090	ADDED NOTE 3, SHEET 1. CHD P/N WAS EL814-ARTIC (TRUCK & AUTO SUPPLY) & #30806 (POLAR WIRE). ADDED P/N C10-28.			5/31/2017	RJC	JAG



-2/ QTY.	-3/ QTY.	-4/ QTY.	-5/ QTY.	-6/ QTY.	B/O	Part #	Description	Material	B/O INFORMATION OR SPECIFICATIONS
1	1	1	-	-		SWA10A-100	LOWER END	SS 17-4 H1150/H1075	
-	-	-	1	1		SWA10A-110	LOWER END	SS 17-4 H1150/H1075	
1	1	1	-	-		SWA10A-200	UPPER END SWIVEL	SS 17-4 H1150/H1075	
-	-	-	1	1		SWA10A-210	UPPER END SWIVEL	SS 17-4 H1150/H1075	
1	1	1	1	1		SWA10A-300	BEARING HOUSING	SS 17-4 H1150/H1075	
1	1	1	1	1		SWA10A-400	THRUST WASHER	AL-BRONZE 630	
1	1	1	1	1		SWA10A-500	SEMI-PIVOT	SS 17-4 H1150/H1075	
1	1	1	1	1		SWA10A-600	COLLAR	SS 17-4 H1150/H1075	
2	2	-	-	-		SWA10A-700	WIRE CLAMP	6061-T6	
-	-	2	2	2		SWA10A-700A	WIRE CLAMP	6061-T6	
1	-	-	-	-		SWA10A-800A	CONNECTOR BUSHING		
-	1	1	-	-		SWA10A-800B	CONNECTOR BUSHING		
-	-	-	1	-		SWA10A-800C	CONNECTOR BUSHING		
1	-	-	-	-	B/O	SWA10A-900A	ROTARY CONTACT		MERCOTAC #230
-	1	-	-	-	B/O	SWA10A-900B	ROTARY CONTACT		MERCOTAC #230
-	-	1	-	-	B/O	SWA10A-900C	ROTARY CONTACT		MERCOTAC #430
-	-	-	1	-	B/O	SWA10A-900D	ROTARY CONTACT		MERCOTAC #630
-	-	-	-	1	B/O	SWA10A-900E	ROTARY CONTACT		MERCOTAC #830
1	1	1	1	1		SWA10A-1100	UPPER DU BEARING	BRONZE/OLIVE TUBING	
1	1	1	1	1	B/O	SWA10A-1200	LOWER DU BEARING		(KAMAN M5520DU)
1	1	1	1	1	B/O	SWA10A-1300	ROLLER THRUST BEARING		(KAMAN B1210TN)
1	1	1	1	1	B/O	SWA10A-1400	CIRCLIP		(KAMAN N3000 350 SPR)
1	1	1	1	1		SWA10A-1800	COVER	SS 17-4 H1150/H1075	
4	6	4	8	12	B/O	SWA10A-1900	1/4 FEMALE SPADE CONNECTOR		(MCMaster-CARR #69525K14)
-	-	4	4	4	B/O	SWA10A-2000	1/8 FEMALE SPADE CONNECTOR		(MCMaster-CARR #69525K14)
4	4	4	4	4		188-FFS-1032-5/8	FLAT SOCKET CAP SCREW	S.S.	10-32 X 5/8 (MCMaster-CARR #92210A303)
-	-	-	-	1	B/O	188-FFS-1032-3/8	SET SCREW	S.S.	10-32 X 3/8 (MCMaster-CARR #94355A335)
-	-	-	1	-	B/O	188-FFS-1032-1/2	SET SCREW	S.S.	10-32 X 1/2 (MCMaster-CARR #94355A337)
1	1	1	-	-	B/O	188-FFS-1032-5/8	SET SCREW	S.S.	10-32 X 5/8 (MCMaster-CARR #92311A430)
1	1	1	1	1	B/O	EL-PLUG-F	FEMALE PLUG	PE High Density	(MCMaster-CARR #7216K6)
1	1	1	1	1	B/O	EL-PLUG-M	MALE PLUG	PE High Density	(MCMaster-CARR #7216K5)
1	1	-	-	-	B/O	EL314SITOW	3 WIRE	6 FT. (TEXCAN #EL 314SITOW 3/14)	
-	-	1	-	-	B/O	EL414-ARTIC	4 WIRE	6 FT. (TRUCK & AUTO SUPPLY #EL 414-ARTIC 4/14)	
-	-	-	1	-	B/O	EL614-ARTIC	6 WIRE	6 FT. (TRUCK & AUTO SUPPLY #EL 614-ARTIC)	
-	-	-	-	1	B/O	30806	8 WIRE	6 FT. (POLAR WIRE #30806)	
1	1	1	1	1	B/O	600.1318	UP DECAL		
1	1	1	1	1		C10-28	BUSHING	SAE 640 BRONZE	3/4 Ø SHAFT X 1 O.D. X 1-1/4 (MCMaster-CARR #63811K193)



NOTES:

1. FOR REBUILD ONLY.
2. ALL ASSEMBLY TO BE DONE IN ACCORDANCE WITH SWA SWIVEL MANUAL.
3. 8 WIRE STRIP OUTER JACKET & DOUBLE LAYER HEAT SHRINK.

		TITLE	
		SWA10A SWIVEL	
DWG NO.		SWA10A	REV 3
MATERIAL		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
FINISH		XXX ± .005 FRACTIONS ± 1/8	
SPEC		XX ± .01 ANGLES ± 5° SURFACES ± 125	
DRAWN BY: GILBERT		1. BREAK ALL SHARP EDGES .015 X .45° OR .0156	
CHECKED: DD 04/18/2017		2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
CIPS APPR: AA 05/05/2017		3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
QA APPR: JL 05/10/2017		USED ON MODEL	
APPROVED: JAG 06/02/2017			
SCALE 1:4	DATE 11/14/2012	SHEET 1 OF 2	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

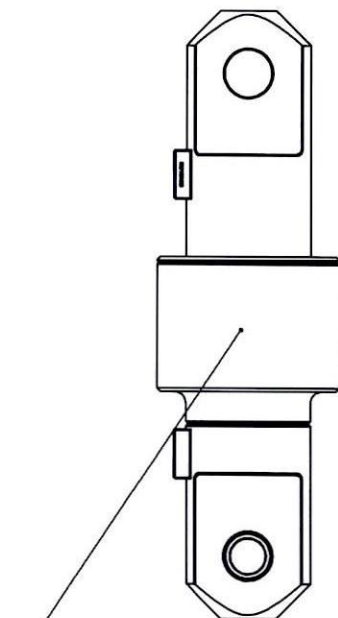
Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

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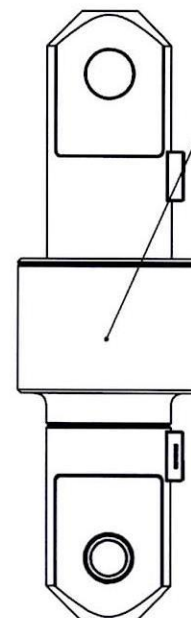
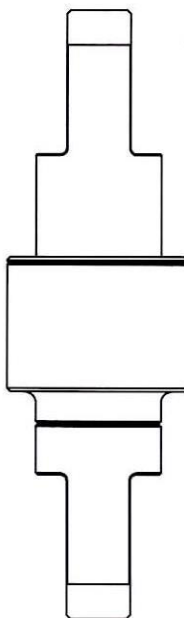
REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED



ENGRAVE P/N, S/N, SWL



LASER ENGRAVE DART LOGO



DART AEROSPACE	
TITLE SWA10A SWIVEL	
DWG NO. SWA10A	REV 3
MAT'L HEAT TREAT FINISH SPEC	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ± 5° .X ± .1 SURFACES = 125/✓
DRAWN BY: GILBERT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DD 04/18/2017	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: AA 05/05/2017	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: JL 05/10/2017	USED ON MODEL
APPROVED: JAG 06/02/2017	
SCALE 1:4	DATE 11/14/2012
SHEET 2 OF 2	

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Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					